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Are Psychosocial Resources Associated With Perceived Facial Aging in Men?

Emilou Noser, MSc[1,2], Andreas Walther, PhD[1,2], and Ulrike Ehlert, PhD[1,2]

Abstract

Background: Looking younger than actual age has been related to a variety of health outcomes. Optimism, self-esteem, and relationship satisfaction are important psychosocial resources for mental health. Little is known about their relation with a younger facial appearance. **Objective:** This study analyzed whether these psychosocial resources are associated with a younger facial appearance and if their effects were mediated through mental health. **Method:** A sample of *N* = 223 self-reporting healthy men aged 40 to 75 years filled in questionnaires to assess optimism (Life Orientation Test–Revised), self-esteem (Multidimensional Self-Esteem Scale), relationship satisfaction (Relationship Assessment Scale), and mental health (Short-Form Health Survey). Five female raters estimated the visual age of each participant from a frontal face photograph. **Results:** Looking younger (compared with chronological age) was correlated with optimism, relationship satisfaction, and mental health. Mediation analyses and structural equation modeling indicated that mental health mediated the association between each psychosocial resource and a younger appearance. **Discussion:** The results emphasize the importance of promoting psychosocial resources and mental health in men 40+ for the maintenance of good health and the deceleration of facial aging.

Keywords

looking younger, mental health, optimism, self-esteem, relationship satisfaction

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Introduction

It is common to intuitively estimate the age of another person based on their facial appearance. This "perceived age" significantly affects how we evaluate, approach, and interact with others (Voelkle, Ebner, Lindenberger, & Riediger, 2012). As when forming first impressions, only the most accessible information about another person is processed. In this respect, it is common to evaluate or even stereotype people based on their facial appearance (Hehman, Leitner, & Freeman, 2014; Kotter-Grühn & Hess, 2012). Commonly, age-based stereotypes tend to associate younger age with more positive and older age with more negative characteristics. Whereas positive characteristics are assigned to younger adults (e.g., hard-working, impressive, efficient), particularly negative physical characteristics were ascribed to older adults, such as being fragile, tired, or sick (Gruehn, Gilet, Studer, & Labouvie-Vief, 2011). As described by Ferguson (1980), the widespread conception that aging means decline and poor health can become a self-fulfilling prophecy, which might have considerable consequences for the affected individuals. Indeed, negative age stereotyping has been shown to have adverse effects on the performance capacities and well-being of older individuals (Hess, Auman, Colcombe, & Rahhal, 2003; Meisner, 2012; Rothermund, 2005). Consequently, it might be beneficial to look younger than their chronological age especially for older individuals, because their social interactions may be less inflicted by negative age stereotypes.

Perceived age seems to be predictive of longevity beyond subjective and objective health status, and cognitive ability (Dykiert et al., 2012; Gunn, Larsen, Lall, Rexbye, & Christensen, 2016). Furthermore, perceived age has been shown to be a valid biomarker of healthy aging and a strong survival predictor of twins aged more than 70 years (Christensen et al., 2009). In this study,

[1]Clinical Psychology and Psychotherapy, University of Zurich, Switzerland
[2]University Research Priority Program, Dynamics of Healthy Aging, University of Zurich, Switzerland

Corresponding Author:
Ulrike Ehlert, Institute of Psychology, Clinical Psychology and Psychotherapy, University of Zurich, Binzmuehlestrasse 14/26, Zurich 8050, Switzerland.
Email: u.ehlert@psychologie.uzh.ch

perceived age correlated with functional and molecular aging phenotypes such as physical and cognitive functioning and leukocyte telomere length. Shorter telomere length is associated with diseases related to aging, individual lifestyle factors, and mortality (Deelen et al., 2014). The co-twin study also showed that 40% of the variation in perceived age is due to nongenetic factors (Christensen et al., 2009). Therefore, it is assumed that lifestyle factors can have significant long-term effects on perceived age (Gunn et al., 2015). In particular, a high social status, being married, nonsmoking, and describing no depressive mood are significantly associated with a younger appearance in comparison with chronological age from a facial photograph (Rexbye et al., 2006).

To date however, it is still unknown whether and how perceived age is influenced by specific psychosocial resource factors. In particular, optimism, self-esteem, and relationship satisfaction are among the most important psychosocial resources in mental health and are highly interrelated.

Optimism, defined as generalized positive outcome expectancies, has been consistently shown to be an important internal resource for adjusting mental and physical health (Carver & Scheier, 2014; Colby & Shifren, 2013; Jiang et al., 2014; Rasmussen, Scheier, & Greenhouse, 2009; Steptoe, Wright, Kunz-Ebrecht, & Iliffe, 2006). For instance, people who scored high on optimism were less likely to develop a coronary heart disease (Giltay, Zitman, & Kromhout, 2006; Kim, Smith, & Kubzansky, 2014) and showed lower overall mortality (Brummett, Helms, Dahlstrom, & Siegler, 2006) compared with individuals who scored low on optimism. Avvenuti, Baiardini, and Giardini (2016) suggested that optimism may have a direct effect on the neuroendocrine system and on immune responses, and may have an indirect effect on health outcomes by promoting protective health behaviors. Optimism is strongly associated with self-esteem and this could be explained by a core-construct of personal resilience (Mäkikangas, Kinnunen, & Feldt, 2004).

High self-esteem, defined as the individual's relation toward the self, is positively related to different dimensions of subjective well-being (Karatas & Tagay, 2012; Manhas, 2014) and seems to be a protective resource factor against depression and anxiety symptoms (Orth, Robins, Meier, & Conger, 2016; Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995; Sowislo & Orth, 2013). Empirical findings support this assumption as low self-esteem is a key criterion for the identification of a wide range of mental disorders such as major depression, bipolar disorder, and borderline and avoidant personality disorders (Orth, Robins, & Meier, 2009; Thoits, 2013).

Bringing optimism and self-esteem together, several studies found that individuals with low optimism and low self-esteem experience greater distress and use more avoidant coping strategies to manage stressful events (Mäkikangas & Kinnunen, 2003). By contrast, high optimism and high self-esteem are key elements of resilience (Wu et al., 2013), which is defined as the capacity and dynamic process of adaptively overcoming stress and adversity while maintaining normal psychological and physical functioning (Russo, Murrough, Han, Charney, & Nestler, 2012).

Likewise, findings from large-scale longitudinal studies strongly indicate that positive interpersonal relationships are important factors of resilience (Burt & Paysnick, 2012). The majority of individuals evaluate romantic relationships as the most intimate adult relationship they experience and as their primary source of affection and support (Levinger & Huston, 1990). Moreover, a satisfying marriage or close relationship has been identified as one of the most important goals in life (Roberts & Robins, 2000). Therefore, the quality of intimate relationships is likely to be an important resource factor in the individual's mental health. There is research showing that greater relationship discord is associated with broad categories for mood, anxiety, and substance-use disorders (Whisman, 2007). Longitudinal research indicated that low relationship satisfaction predicts increases in depression symptoms over time (Whisman & Uebelacker, 2009). In contrast, higher relationship satisfaction is related to lower perceived stress, less depressive mood, reduced cortisol levels, and higher life satisfaction (Ditzen, Hoppmann, & Klumb, 2008; Fuller-Iglesias, 2015). In addition, subjects describing high relationship satisfaction show better physical (Robles, Slatcher, Trombello, & McGinn, 2014) and mental health (Bradbury, Fincham, & Beach, 2000; McShall & Johnson, 2015; Proulx, Helms, & Buehler, 2007; Whisman & Baucom, 2012) compared with subjects reporting low relationship satisfaction.

Relationship satisfaction has been associated with both optimism (Carver, Scheier, & Segerstrom, 2010; House, Landis, & Umberson, 1988; Smith, Pukall, & Chamberlain, 2013; Srivastava, McGonigal, Richards, Butler, & Gross, 2006) and self-esteem (Erol & Orth, 2014; Hendrick, 1988; Lavner, Karney, & Bradbury, 2013; Vorauer & Quesnel, 2013). Individuals with higher levels of optimism indicated higher relationship satisfaction (Srivastava et al., 2006). Simultaneously, higher initial levels of self-esteem predicted higher levels of relationship satisfaction and positive changes in self-esteem led to an increase in relationship satisfaction (Erol & Orth, 2014).

Taken together, these findings provide evidence that optimism, self-esteem, and relationship satisfaction are important psychosocial resource factors for mental health. Mental health is conceived as a syndrome of subjective well-being consisting of positive feelings toward life and positive functioning in life. Mental health is a protective factor against, while psychological distress or mental illness is a risk factor for, biological and cellular aging (Lindqvist et al., 2015; Verhoeven et al., 2014). Cellular aging, operationalized by shortened leukocyte

telomere lengths, is also closely linked to an older appearance (Christensen et al., 2009). As mental health is a protective factor against cellular aging, it might also be a potential protective factor against facial aging.

The purpose of the present study was to examine whether the psychosocial resource factors for mental health, namely optimism, self-esteem, and relationship satisfaction, are associated with perceived age. As optimism, self-esteem, and relationship satisfaction are shown to be highly interrelated and protective psychosocial resource factors in mental health, we hypothesize that these psychosocial resources might have buffering effects through mental health on perceived facial aging in men.

Method

The study has a cross-sectional design and is part of a larger research-project which focuses on healthy aging in men (Walther, Philipp, Lozza, & Ehlert, 2016).

Participants and Procedure

In the study, a total of 271 men provided psychometric and biological data. The sample size was determined with G-Power calculation (G*Power, Version 3.1.3, Faul, Erdfelder, Buchner, & Lang, 2009). For ANOVA with fixed effects, main effects, and interactions, a priori effect sizes were estimated to reach medium (f^2 = .15) to large (f^2 = .35) effects based on prior moderation analyses with this dataset (Walther, Mahler, Debelak, & Ehlert, 2017). For an effect size of f^2 = .25, alpha error of .05, numerator df = 5, and two groups, a power of .90 would be achieved with a sample size of 270. The final sample size of N = 271 provided a good powered (.902) analysis. All participants were recruited among the general population. The study was advertised online and via flyers that were distributed. Inclusion criteria, in addition to male gender and age between 40 and 75 years, were no self-reported mental and physical illnesses. The sample exclusively consisted of participants who reported to be in a close relationship (N = 223). In the following, the procedures and measures used in the present study are described. First, online questionnaires were completed to assess the psychosocial resource factors and mental health. Second, participants had a frontal face photograph taken with a digital camera in the laboratory. To achieve comparable photographs, the participants were instructed to maintain a neutral facial expression while standing upright in front of a white background. Informed consent was obtained from all participants before completing the measures. The local Ethics Committee of the Faculty of Arts at the University of Zurich approved the study protocol before data collection.

Measures

Perceived age. Five female raters, aged 41 to 70 years, with a mean age of 55.00 (SD = 11.51), estimated the age of each participant from a face photograph on a scale from 0 to 100 years. The assessors had no prior experience with age assessment. They were not informed about the age range of the participants beforehand. The assessments were conducted via presentation of the photographs on a computer screen. The sequence of photographs was randomly generated to reduce variance between age ratings. To increase reliability, the scores from the five raters were averaged. The mean estimate of the age for each participant was used as the participant's perceived age. The method used for generating perceived age has been tested in terms of its reliability and validity previous to this study (Gunn et al., 2015; Gunn et al., 2008; Gunn et al., 2009). In this study, the perceived age rating had a Cronbach's alpha of α = .97, representing excellent interrater reliability.

Dispositional optimism (Life Orientation Test–Revised [LOT-R]). The German version of the LOT-R (Scheier, Carver, & Bridges, 1994), developed by Glaesmer, Hoyer, Klotsche, and Herzberg (2008), is a 10-item (three target items for each optimism and pessimism, four filler items) self-report measure of individual differences in dispositional optimism and pessimism. Items were rated from 1 (*strongly agree*) to 5 (*strongly disagree*). In the present study, only the optimism scale was used. Target items for optimism are "In uncertain times, I usually expect the best," "I'm always optimistic about my future," and "Overall, I expect more good things to happen to me than bad." Scale scores are the sum of items, including reverse coding of the relevant items. Raw scores range from 3 to 15, with higher scores reflecting higher optimism. In a validation study (Glaesmer et al., 2008), internal consistency for optimism was α = .69. In this sample, Cronbach's alpha coefficient for optimism was α = .62, suggesting questionable internal consistency.

Self-esteem (Multidimensional Self-Esteem Scale [MSES]). The MSES (Schütz & Sellin, 2006) is the German adaptation of the Multidimensional Self-Concept Scale (MSCS) developed by Fleming and Courtney (1984). The MSES consists of 32 items and distinguishes six dimensions: self-regard, social skills, social confidence, performance self-esteem, physical appearance, and physical abilities. Each subscale consists of five to seven items. In addition, the subscales are combined to form a global self-esteem index, which comprises all dimensions. In this study, the global self-esteem index was used. The 32 items were rated on 7-point scales ranging from 1 (*not at all*) to 7 (*very much*) for items measuring intensity and from 1 (*never*) to 7 (*very much*) for items measuring frequency. Raw scores range from 32 to 224 with higher scores reflecting higher global self-esteem. In previous research, satisfying indications for internal consistency for global self-esteem have been obtained (Daig, Gunzelmann, & Brahler, 2008; Rentzsch, Wenzler, & Schütz, 2016). Cronbach's alpha for global self-esteem in the present sample was α = .80, suggesting good internal consistency.

Relationship satisfaction (Relationship Assessment Scale [RAS]). The German version of the RAS (Hendrick, 1988; developed by Sander & Böcker, 1993) is a seven-item measure for the assessment of relationship satisfaction. The RAS is rated on a 5-point scale. Two items are scored reverse. Mean scores range from 1 (*low satisfaction*) to 5 (*high satisfaction*). The reliability and validity of the German version of the RAS have been established in several studies (Sander & Böcker, 1993). In the present study, the Cronbach's alpha for relationship satisfaction was α = .93, suggesting excellent internal consistency.

Mental health (Short-Form 36 [SF-36]). The validated German version of the SF-36 Health Survey (Bullinger, Kirchberger, & Ware, 1995) generates eight bio-psychosocial domains of health-related quality of life. The eight subscales can be categorized in two dimensions: physical health (Physical Function, Physical Role, Bodily Pain, and General Health) and psychological health (Vitality, Social Functioning, Emotional Role, and Mental Health). In the present study, only the Mental Health subscale was of relevance. The Mental Health subscale, derived from the Psychological General Well-Being (PGWB) schedule, consists of five items that cover four major mental health dimensions: depression, anxiety, loss of behavioral or emotional control, and psychological well-being (Ware & Sherbourne, 1992). It includes a mixture of mental symptoms and psychological well-being items to prevent a ceiling effect, when used in general population studies (Bech, Olsen, Kjoller, & Rasmussen, 2003). The Mental Health subscale is transformed into a scale from 0 (*lowest possible state*) to 100 (*best possible state*). Previous research indicated an internal consistency of α = .81 in terms of the Cronbach's alpha coefficient (Friedman, Heisel, & Delavan, 2005). In the present study, the Cronbach's alpha for mental health was α = .80, thus suggesting good internal consistency.

Analysis

Statistical analyses included several steps and were performed using the IBM Statistical Package for the Social Sciences (SPSS Version 22). Associations between the main study variables were analyzed by using bivariate and partial correlations. To examine whether mental health mediated the relation between the psychosocial resources (optimism, self-esteem, and relationship satisfaction) and a younger appearance, mediation analysis was conducted using PROCESS (Hayes, 2013). However, the preliminary regression analyses reported below did not show a significant relationship between two predictors (optimism, self-esteem) and the outcome (difference age [DA]). Preacher and Hayes (2004) argued that indirect effects might still exist despite the nonsignificant relationship between predictor and outcome. According to the authors, the relation between predictor and mediator and between the mediator and outcome must be significant only. This applies to the present data.

To further analyze the overall indirect effects of the psychosocial resources on perceived age, a structural equation model was developed using AMOS 22.0. In mediation analysis, the direct effects of the predictors (optimism, self-esteem, and relationship satisfaction) on the outcome (younger appearance) became nonsignificant. Therefore, the indirect effects of these predictors were included in the further structural equation model analysis exclusively.

Analyses were conducted using the bootstrapping method with bias-corrected confidence estimates (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2004). In this study, the 95% confidence interval of the indirect effects was obtained with 5,000 bootstrap resamples (Preacher & Hayes, 2008). Body mass index (BMI), education, income, and smoking were entered as control variables.

Results

Descriptive Analysis

The age of the sample ranged from 40 to 75 years, with a mean of 57.19 years (*SD* = 10.84). The participants had on average a BMI of 25.42 (*SD* = 3.05). In terms of education, 136 participants (60.7%) attained primary and secondary qualifications, 88 (39.3%) attained tertiary qualifications. The annual gross income was for 105 (46.7%) below and for 120 participants (53.3%) above 100,000 Swiss francs. The majority of the participants were nonsmokers (*n* = 182, 81.3%), 23 participants (10.3%) described themselves as occasional smokers, and 19 participants (8.4 %) reported to be regular smokers.

Correlation Analysis

The mean of the perceived age (*M* = 58.10, *SD* = 11.93) was close to the mean of the chronological age (*M* = 57.17, *SD* = 10.86) and these parameters were strongly correlated, $r(221) = .92$, $p < .001$. Due to their high correlation, the difference between participant's chronological age and perceived age (DA = perceived age − chronological age) was used for further analyses. A higher value (above zero) in this variable implies an older appearance whereas a lower value (below zero) reflects a younger appearance in comparison with chronological age. The raters overestimated the age of the participants by an average of 0.93 years (*SD* = 4.66, MIN = −9.80, MAX = 13.00). Descriptive statistics and intercorrelations for the relevant variables are presented in Table 1. DA significantly correlated with optimism, relationship satisfaction, and mental health. Mental health significantly correlated with optimism, self-esteem, and relationship satisfaction. No correlation

Table 1. Descriptive Statistics and Intercorrelations Among the Relevant Variables (N = 223).

		M	*SD*	1	2	3	4	5
1.	DA	0.93	4.66	1.00	−.12*	−.03	−.14**	−.17**
2.	Optimism	9.41	2.02	−.12*	1.00	.52**	.26**	.39**
3.	Self-esteem	177.64	21.59	−.03	.52**	1.00	.28**	.52**
4.	Relationship satisfaction	4.18	0.72	−.14**	.26**	.29**	1.00	.32**
5.	Mental health	75.43	12.49	−.17**	.39**	.52**	.32**	1.00

Note. Control variables: BMI, income, education, and smoking. DA = difference age; BMI = body mass index.
*$p < .05$. **$p < .01$ (one-tailed).

exceeded .70; thus, the assumption of multicollinearity was not violated.

Mediation Analysis

Next, we were interested in the mediating effect of mental health in the relation between the predictors (optimism, self-esteem, relationship satisfaction) and the outcome (DA). Mediation analyses confirmed the significant relationships between predictors and mediator and between mediator and outcome. Moreover, they provided evidence for the mediating role of mental health.

Optimism was not a significant predictor of DA, $b = -0.27$, $t(217) = -1.72$, $p = .09$. Optimism was a significant predictor of the mediator mental health, $b = 0.61$, $t(217) = 6.28$, $p < .001$. The mediator mental health, controlling for optimism, was significantly related to DA, $b = -0.22$, $t(216) = -2.07$, $p < .05$. Optimism, controlling for the mediator, was not a significant predictor of DA, $b = -0.13$, $t(216) = -0.79$, $p = .43$. The bootstrapped unstandardized indirect effect was $b = -0.14$. The 95% confidence interval ranging from −0.30 to −0.02 did not include zero, thus the indirect effect was statistically significant and mediation occurred (Preacher & Hayes, 2004).

Self-esteem was not a significant predictor of DA, $b = -0.01$, $t(217) = -0.37$, $p = .71$. Self-esteem was a significant predictor of the mediator mental health, $b = 0.08$, $t(217) = 9.00$, $p < .001$. The mediator mental health, controlling for self-esteem, was significantly related to DA, $b = -0.33$, $t(216) = -2.81$, $p < .01$. Self-esteem, controlling the mediator, was not a significant predictor of DA, $b = 0.02$, $t(216) = 1.15$, $p = .25$. The bootstrapped unstandardized indirect effect was $b = -0.03$. The 95% confidence interval ranging from −0.04 to −0.01 did not include zero, giving evidence for the mediating role of mental health.

Relationship satisfaction was significantly related to DA, $b = -0.90$, $t(217) = -2.07$, $p < .05$. Relationship satisfaction was a significant predictor of the mediator mental health, $b = 1.39$, $t(217) = 4.93$, $p < .001$. The mediator mental health, controlling for relationship satisfaction, was significantly related to DA, $b = -0.21$, $t(216) = -2.04$, $p < .05$. Relationship satisfaction, controlling for the mediator mental health, became an nonsignificant predictor of DA, $b = -0.61$, $t(216) = -1.33$, p = .18. The bootstrapped unstandardized indirect effect was $b = -0.29$. The 95% confidence interval ranging from −0.66 to −0.02 did not include zero, thus the indirect effect was statistically significant and mediation can be assumed (Preacher & Hayes, 2004).

The Structural Equation Model

To test the indirect effects of the psychosocial resources (optimism, self-esteem, and relationship satisfaction) on DA via mental health in an overall model, we applied structural equation modeling. The model contained one endogenous variable (DA) and four exogenous variables (optimism, self-esteem, relationship satisfaction, and mental health). The results showed that the model goodness of fit was excellent: $\chi^2(3, N = 223) = 5.017$, $p = .17$; root mean square error of approximation (RMSEA) = 0.055 [0.000, 0.137]; standardized root mean square residual (SRMR) = .0293; Tucker–Lewis index (TLI) = 0.963; and comparative fit index (CFI) = 0.989. The results confirmed the mediating role of mental health in the relation between the psychosocial resources and DA. The direct and indirect effects of the overall model are presented in Table 2. The indirect effect of optimism on DA was $b_{stand} = -0.026$ [−0.074, −0.003], $p < .05$. In the same model, the indirect effect of self-esteem on DA was $b_{stand} = -0.071$ [−0.133, −0.022], $p < .01$, and the indirect effect of relationship satisfaction on DA was $b_{stand} = -0.029$ [−0.073, −0.005], $p < .01$. The standardized regression weights indicate small to medium effect sizes within the model (Cohen, 1990). The overall model accounted for 32% variance in mental health and 3% variance in DA. The control variables were statistically not significant. The factor loadings remained significant after controlling for BMI, education, income, and smoking. The structural equation model including all significant variables is shown in Figure 1. Taken together, these results show that mental health is a considerable mediator in the relation between the psychosocial resources and DA.

Discussion

To our knowledge, this study demonstrated for the first time that psychosocial resources are indirectly

Table 2. Direct and Indirect Effects and 95% Confidence Intervals for the Overall Structural Equation Model (N = 223).

		95% CI		
	B	Lower bound	Upper bound	*p*
Direct effects				
OPT → MH	0.147	0.013	0.285	.034
SE → MH	0.404	0.263	0.527	.001
RS → MH	0.162	0.039	0.279	.009
MH → DA	−0.177	−0.308	−0.047	.008
Indirect effects				
OPT → MH → DA	−0.026	−0.074	−0.003	.022
SE → MH → DA	−0.071	−0.133	−0.022	.006
RS → MH → DA	−0.029	−0.073	−0.005	.009

Note. Control variables: BMI, income, education, smoking. CI = confidence interval; OPT = optimism; MH = mental health; SE = self-esteem; RS = relationship satisfaction; DA = difference age (perceived age − chronological age).

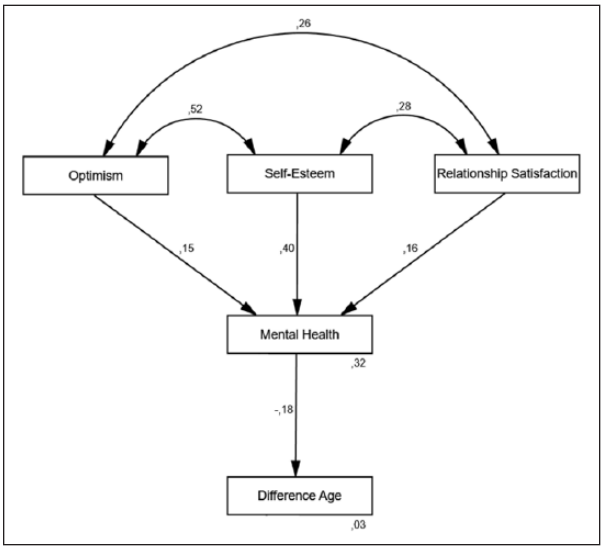

Figure 1. Structural equation model (N = 223).
Note. Factor loadings are standardized (p < .01).

associated with a younger facial appearance. Mental health mediated the relation between these psychosocial resources and perceived age. Optimism, self-esteem, and relationship satisfaction were strong predictors of mental health which was significantly associated with a younger facial appearance in healthy men.

The findings confirm the meaningful role of optimism, self-esteem, and relationship satisfaction for mental health functioning (e.g., Carver & Scheier, 2014; Fuller-Iglesias, 2015; Karatas & Tagay, 2012). Optimism and self-esteem are highly intercorrelated, forming the core-construct of resilience (Mäkikangas et al., 2004). In comparison of effect sizes, self-esteem exhibited the strongest influence on mental health. This fits with recent findings, showing that self-esteem acts as a protective factor for depression and anxiety (Rosenberg et al., 1995; Sowislo & Orth, 2013). Optimism and relationship satisfaction had beneficial effects of similar magnitudes on mental health, thus showing that generalized positive outcome expectancies and satisfying romantic relationships are of central importance for mental health.

Furthermore, the findings of this study revealed that mental health was significantly related to a younger facial appearance. Specifically, the difference between chronological age and perceived age seems to play an important role in terms of mental health. The results point out the importance for the promotion of mental health in men older than 40 for the maintenance of good health and the deceleration of perceived facial aging. A younger appearance enhances the likelihood to be associated with more positive age-based stereotypes and, becoming a self-fulfilling prophecy, looking younger leads to higher performance capacities and higher psychological well-being (e.g., Hess et al., 2003; Meisner, 2012; Rothermund, 2005). Likewise, younger looking individuals might be more socially integrated and supported, which again can have positive impacts on their health. Accordingly, a younger facial appearance has been associated with better physical health and longevity (Christensen et al., 2009).

To our knowledge, this was the first study examining the association of mental health and a younger facial appearance in healthy men. Previous research offers few lines of interpretation for the novel findings regarding the relation between mental health and a younger facial appearance. A study examining cellular aging found links between psychological distress of depression and shortened telomere lengths (Verhoeven et al., 2014). Psychological distress has a large, detrimental impact on the wear and tear of a person's body, resulting in accelerated biological aging and causes a person's telomeres to shorten, leading to enhanced cellular aging. Further on, biological and cellular aging are accompanied by perceived facial aging as well (Christensen et al., 2009). However, mental health can be a protective factor against cellular, biological, and facial aging. Neuroendocrine pathways are assumed to be responsible for the association between mental health and facial aging and need to be examined in future studies.

Limitation and Future Direction

Some limitations of this study should be noted. First, this study was cross-sectional and causal inferences are limited by the design. Therefore, associations between the investigated psychosocial resources, mental health, and perceived age do not point to causality. Longitudinal studies are crucial to understand whether and to what degree changes in perceived age are related to or independent of changes in the psychosocial resources over time. Second, this study was based on a nonexperimental research design, and therefore, the results do not allow for causal explanation. Testing interventions designed to manipulate the psychosocial resources would be preferable to identify underlying mechanisms. Third, all of the psychosocial measures were self-reported, which can generate response bias. To reduce the likelihood of socially accepted answers, the psychometric questionnaires were completed online and encrypted with a personal code. With regard to relationship satisfaction, future work should incorporate dyadic perspectives to assess the mutual dependence inherent in close relationships (e.g., Lewis & Butterfield, 2007). Another limitation, albeit an intentional one, is that the results only apply to self-reporting healthy men between 40 and 75 years. The study examined the association between psychosocial resources and perceived age in men. According to Oblong (2012), male skin progressively thins with advanced age, whereas postmenopausal female skin undergoes a more rapid thinning of the dermis due to decreasing estrogen levels in menopause. Indeed, declining estrogen levels are associated with a variety of cutaneous changes and facial aging in postmenopausal women (Campbell et al., 2014). To examine the influence of psychosocial resources on facial aging independently of postmenopausal status, we focused in this study on aging men exclusively. Finally, in this sample, the optimism scale of the LOT-R achieved a slightly lower internal consistency than the value found in a validation study (Glaesmer et al., 2008). Nonetheless, the LOT and its revised version are the most widely used instruments for measuring optimism in psychological research (Glaesmer et al., 2012).

Further studies are needed to gain more comprehensive insights into the influence of psychosocial resources for mental health on perceived age. In particular, future research should incorporate longitudinal data collection to examine the long-term beneficial effects of psychosocial resources on perceived age. Nevertheless, this study is the first to link psychosocial resources to perceived facial aging and establishes opportunities to promote mental health functioning in older age.

Conclusion

This research provided initial insight into the association between psychosocial resources and facial aging. Results demonstrated that optimism, self-esteem, and relationship satisfaction are indirectly associated with a younger appearance. Mental health considerably mediated the link between these psychosocial resources and a younger appearance. The findings reveal that important psychosocial resource factors in mental health are linked to a younger appearance, which in return can yield positive effects in daily life.

Declaration of Conflicting Interests

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